

What is claimed is:

1. A replaceable workpiece shielding apparatus for replaceably preventing processing on the engaged portion of the workpiece comprising:
  - 5 a) a workpiece support for supporting the workpiece;
  - b) a replaceable shield of comparable weight as the workpiece for allowing replacement of the shield in the same way as the replacement of the workpiece, the shield engaging a portion of the workpiece on the opposite side of the workpiece support and shielding the engaged portion of the  
10 workpiece during processing thereof to prevent processing on the engaged portion of the workpiece;
  - c) a moving means for engaging and disengaging the shield with the portion of the workpiece.
- 15 2. An apparatus as in claim 1 further comprising a shield restraint clamp for holding the shield against the portion of the workpiece.
3. An apparatus as in claim 2 further comprising a shield restraint pressing means for pressing on the shield restraint clamp so that the shield is  
20 pressing against the portion of the workpiece.
4. An apparatus as in claim 3 in which the shield restraint pressing means employs a spring action for pressing on the shield restraint clamp.
- 25 5. An apparatus as in claim 1 further comprising a shield support means for supporting the shield so that the shield and the workpiece are spaced apart when the moving means disengages the workpiece from the shield.

- 5 6. An apparatus as in claim 2 further comprising a shield restraint support means for supporting the shield restraint clamp so that the shield and the shield restraint clamp are spaced apart when the moving means disengages the workpiece from the shield.
- 10 7. An apparatus as in claim 1 in which the moving means for engaging the shield with the workpiece comprises a movable shaft connected to the workpiece support.
8. An apparatus as in claim 1 in which the workpiece support has a top surface, the top surface of the workpiece support is circular and the shield has an annular form.
- 15 9. An apparatus as in claim 1 further comprising shield alignment means, connected to the shield and the shield support means, for aligning the shield with the shield support means.
- 20 10. A replaceable workpiece shielding apparatus for replaceably preventing processing on the engaged portion of the workpiece comprising:
- 25 a) a workpiece support for supporting the workpiece;
- b) a replaceable shield of comparable weight as the workpiece for allowing replacement of the shield in the same way as the replacement of the workpiece, the shield engaging a portion of the workpiece on the opposite side of the workpiece support and shielding the engaged portion of the workpiece during processing thereof to prevent processing on the engaged portion of the workpiece;

- c) a moving means for engaging the shield with the portion of the workpiece.
- d) a shield restraint clamp for holding the shield against the portion of the workpiece;
- e) a non-reactive gas inlet for providing a non-reactive gas to a cavity defined  
5 by the workpiece support, the workpiece, the shield and the shield restraint clamp, the cavity retaining the non-reactive gas in the vicinity of the shielded portion of the workpiece.

11. An apparatus as in claim 10 in which the shield restraint clamp stays close  
10 to the workpiece support so that the cavity retaining the non-reactive gas has no large leak when the moving means engages the workpiece with the shield.

12. An apparatus as in claim 10 in which the workpiece is a semiconductor wafer, the workpiece support has a top surface, top surface of the workpiece  
15 support is circular, and the cavity retains the non-reactive in the vicinity of the circumferencial edge of the semiconductor wafer.

13. An apparatus as in claim 10 further comprising a shield restraint pressing means for pressing on the shield restraint clamp so that the shield is  
20 pressing against the portion of the workpiece.

14. An apparatus as in claim 13 in which the shield restraint pressing means employs a spring action for pressing on the shield restraint clamp.

25 15. An apparatus as in claim 10 further comprising a shield support means for supporting the shield so that the shield and the workpiece are spaced apart when the moving means disengages the workpiece from the shield.

16. An apparatus as in claim 10 further comprising a shield restraint support means for supporting the shield restraint clamp so that the shield and the shield restraint clamp are spaced apart when the moving means disengages  
5 the workpiece from the shield.

17. An apparatus as in claim 10 in which the moving means for engaging the shield with the workpiece comprises a movable shaft connected to the workpiece support.

10

18. An apparatus as in claim 10 further comprising shield alignment means, connected to the shield and the shield support means, for aligning the shield with the shield support means.